



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

August 30, 2013

WELL WORK PERMIT

Re-Work

This permit, API Well Number: 47-7700170, issued to ENERGY CORPORATION OF AMERICA, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: CASCADE 474
Farm Name: PRESTON CO. COAL & COKE
API Well Number: 47-7700170
Permit Type: Re-Work
Date Issued: 08/30/2013

Promoting a healthy environment.

7700170R

WW - 2B
(Rev. 8/10)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Energy Corporation of America 306345 Preston Valley Masontown 7.5
Operator ID County District Quadrangle

2) Operator's Well Number: Cascade 474 3) Elevation: 1,717'

4) Well Type: (a) Oil _____ or Gas X _____
(b) If Gas: Production X / Underground Storage _____
Deep X / Shallow _____

5) Proposed Target Formation(s): Marcellus & Huntersville Chert Proposed Target Depth: 7,460

6) Proposed Total Depth: 7682 Feet Formation at Proposed Total Depth: Oriskany

7) Approximate fresh water strata depths: 39' & 175'

8) Approximate salt water depths: 1,128'

9) Approximate coal seam depths: UNKNOWN NONE KNOWN BY OFFSET DATA

10) Approximate void depths, (coal, Karst, other): UNKNOWN NONE KNOWN BY OFFSET DATA

11) Does land contain coal seams tributary to active mine? NO

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)

PLUG BACK MARCELLUS - Clean well with gauge mill. Run wireline to ID exact depth of Marcellus perms to be plugged. Set packer known distance below bottom of perms to act as "bottom guide." Run 1st casing patch (30' patch) and set from approx 7,505' -7,535' KB. Run 2nd patch (35' patch) and set from approx. 7,460' -7,495' KB. Run 2-3/8" tubing into well, sting onto packer and test backside of tubing to 3,500 psi to ensure patch job was successful.

13) CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE	INTERVALS	CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	13"	unknown	unknown		60'	Cement to Surface
Fresh Water	13"					
Coal	13"					
Intermediate	9 5/8"	unknown	36#		1,172'	Cement to Surface
Production	4 1/2"	N-80(WT- 65)	11.6# (10.5# top 254')		7,850'	7,020 Top of Cement
Tubing	2 3/8"	J-55	4.7#		7,525'	
Liners						

Existing well
SDW
8/5/2013

Received

Packers: Kind: Arrowset 1X

Sizes: 4 1/2" & 2 3/8"

Depths Set TBD EST. ~7,525'

Office of Oil and Gas
WV Dept. of Environmental Protection

WR-35

27 July 2006

API # 47-7700170

**State of West Virginia
Division of Environmental Protection
Section of Oil and Gas
Well Operator's Report of Well Work**

Farm name: Preston Co. Coal & Coke Co.**Operator Well No.:** Cascade 474

LOCATION: Elevation: 1717' Quadrangle: Masontown 7.5'
 District: Valley County: Preston
 Latitude: 39° 33' 34.6 "
 Longitude: 79° 48' 35.6 "

Company: EASTERN AMERICAN ENERGY CORPORATION
 501 56th Street
 Charleston, WV 25328

Agent: Rodney Winters**Inspector:** Bill Hatfield**Permit Issued:** 2/21/06**Well work commenced:** 3/6/06**Well work completed:** 3/8/06**Verbal plugging****Permission granted on:**Rotary ☒ Cable ☐ Rig**Total Depth (feet):** Na**Fresh water depths (ft):** Na**Salt-water depths (ft):** Na**Is coal being mined in area? (Y/N)** No**Coal Depths (ft):****Open Flow Data**

Gas:	Initial open flow	Na	MCF/d	Oil:	Initial open flow	0	Bbl/d
	Final open flow	332	MCF/d		Final open flow	0	Bbl/d
	Time of open flow between initial and final tests				Day		
	Static rock pressure	1700	psi	(surface pressure) after	48	Hours	
1 st Producing Formation	Devonian Shale			Pay zone depth (ft)	7476'- 7530'		
2 nd Producing Formation				Pay zone depth (ft)	'- '		
3 rd Producing Formation				Pay zone depth (ft)			
4 th Producing Formation				Pay zone depth (ft)			

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1) DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2) THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Received

Rodney Winters, Agent

For: EASTERN AMERICAN ENERGY CORPORATION

Office of Oil and Gas
WV Dept. of Environmental Protection

By: Designated Agent
 Date: 27 July 2006

2700170R

Cascade

Cascade 474 WR35

STAGE ONE: Devonian Shale
48 Shots 7476'-7530'
116 bbl fluid

Received

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Office of Oil and Gas
WV Dept. of Environmental Protection

7700170 R

1). Date: July 30, 2013

2.) Operator's Well Number Cascade 474

State 47- County 077 Permit 0170

3.) API Well No.: 47- 077 0170

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served:

(a) Name Preston County Coal and Coke Corporation ✓
Address P.O. Box 1900
Morgantown, WV 26507

(b) Name _____
Address _____

(c) Name _____
Address _____

6) Inspector Sam Ward
Address P.O. Box 2327
Buckhannon, WV 26201
Telephone 304-389-7583

5) (a) Coal Operator

Name _____
Address _____

(b) Coal Owner(s) with Declaration ✓

Name Preston County Coal and Coke Corporation
Address P.O. Box 1900
Morgantown, WV 26507

Name Wastec of West Virginia ✓
Address 863 Quail Drive
Princeton, WV 24740

(c) Coal Lessee with Declaration ✓

Name Ambrec Corporation
Address P.O. Box 609
Dellslow, WV 26531

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

OR Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas

x Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through on the above named parties by:

 Personal Service (Affidavit attached)

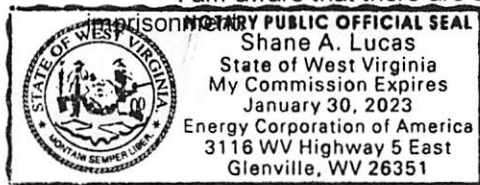
x Certified Mail (Postmarked postal receipt attached)

 Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and



Well Operator Energy Corporation of America

By: Rodney A. Winters ✓

Its: Vice President of Land

Address 501 56th Street SE
Charleston, WV 25304

Telephone 304-925-6100

Subscribed and sworn before me this 12 day of August, 2013

Shane A. Lucas
My Commission Expires JANUARY 30, 2023
Oil and Gas Privacy Notice

Notary Public

Received

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov

Office of Oil and Gas
WV Dept. of Environmental Protection

WW-2A1
(Rev. 1/11)

Operator's Well Number Cascade 474

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6, Section 8(d)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Preston Country Coal and Coke Corporation	Consolidated Gas Company & Ray Resources	1/8	416/169
Ray Resources DBA Great Western Onshore Inc.	EAEC DBA ECA	NA	7/358

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator:
By: Its:

Energy Corporation of America
Rodney A. Winters
Vice President of Land

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Energy Corporation of America OP Code 306345

Watershed (HUC 10) Deckers Creek Quadrangle Masontown 7.5

Elevation 1,717' County Preston District Valley

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes _____ No X

Will a pit be used for drill cuttings? Yes _____ No X

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes _____ No X If so, what ml.? _____

Proposed Disposal Method For Treated Pit Wastes:

- _____ Land Application
- _____ Underground Injection (UIC Permit Number _____)
- _____ Reuse (at API Number _____)
- _____ Off Site Disposal (Supply form WW-9 for disposal location)
- _____ Other (Explain _____)

Will closed loop system be used? NA

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. NA

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? NA

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. NA

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) _____

-Landfill or offsite name/permit number? _____

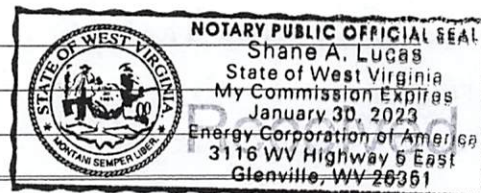
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature _____

Company Official (Typed Name) Rodney A Winters

Company Official Title Vice President of Land



Subscribed and sworn before me this 12 day of August, 20 13

[Signature] Notary Public

My commission expires JANUARY 30, 2023

Form WW-9

Operator's Well No. Cascade 474Proposed Revegetation Treatment: Acres Disturbed 3.12+1 Prevegetation pH Lime 3 Tons/acre or to correct to pH 6.5Fertilizer (10-20-20 or equivalent) 1/3 Ton lbs/acre (500 lbs minimum)Mulch Hay 2 Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31	40	Orchard Grass	15
Alsike Rye	5	Alsike Clover	5
Annual Rye	15		

Attach:

Drawing(s) of road, location, pit and proposed area for land application.

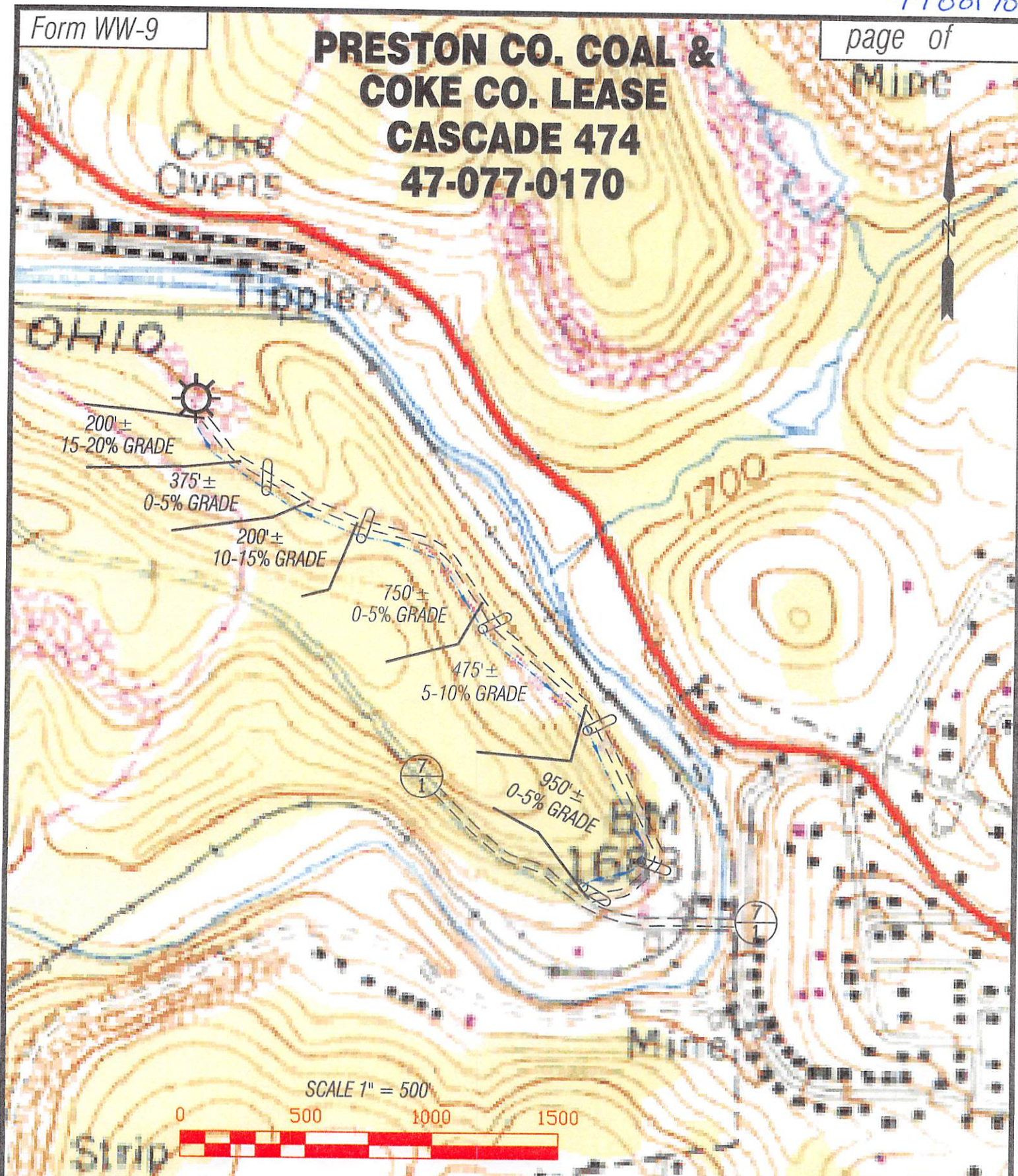
Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: S. P. D. WarrattComments: Existing well maintenance - No stimulation, patching
casing only.Title: Oil & Gas InspectorDate: 8/5/2013Field Reviewed? ☐ Yes☒ No

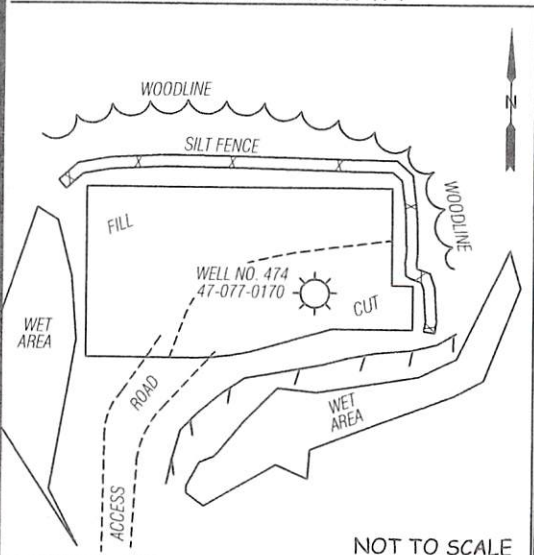
PRESTON CO. COAL & COKE CO. LEASE CASCADE 474 47-077-0170

page of

Mine



Detail Sketch for Well No. 474



NOT TO SCALE



Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING

SURVEYORS
PROJECT MGMT.



ENGINEERS
ENVIRONMENTAL

228 West Main St
P.O. Box 150
Glenville, WV 26031
(304) 462-2834

HONESTY, INTEGRITY, QUALITY

58085 Diles Bottom Road
Shady Side, OH 43087
(740) 671-9911

DRAWN BY
K.D.W.

FILE NO.
8041

DATE
06-03-13

CADD FILE:
8056REC1.DWG

TOPO SECTION OF USGS
MASONTOWN 7.5' QUADRANGLE

ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.E.P. OIL AND GAS BMP MANUAL ENTRANCES AT COUNTY/STATE ROADS SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATION SEPARATE PERMITS MAY BE REQUIRED BY THE D.O.T.

SEDIMENT BASINS (TRAPS) AND APPROPRIATE EROSION CONTROL BARRIERS ARE TO BE CONSTRUCTED AT ALL CULVERT AND CROSS DRAIN INLETS AND OUTLETS AS REQUIRED IN THE WV D.E.P. OIL AND GAS BMP MANUAL. FIELD CONDITIONS (ROCK OUTCROPS AND BEDROCK) MAY PROHIBIT INLET TRAPS BEING INSTALLED. WHEN THESE CONDITIONS EXIST ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED AS NEEDED.

EARTHWORK CONTRACTORS ARE RESPONSIBLE FOR NOTIFICATION TO THE OPERATOR AND INSPECTOR PRIOR TO ANY DEVIATION FROM THIS PLAN.

TEMPORARY SEED & MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION.

CUT & STACK ALL MARKETABLE TIMBER.

STACKED BRUSH MAY BE USED FOR SEDIMENT CONTROL.

APPLICATIONS FOR SEPARATE PLC PERMITS ON THE ACCESS ROAD STREAM CROSSINGS HAVE BEEN PREPARED (IF APPLIES).

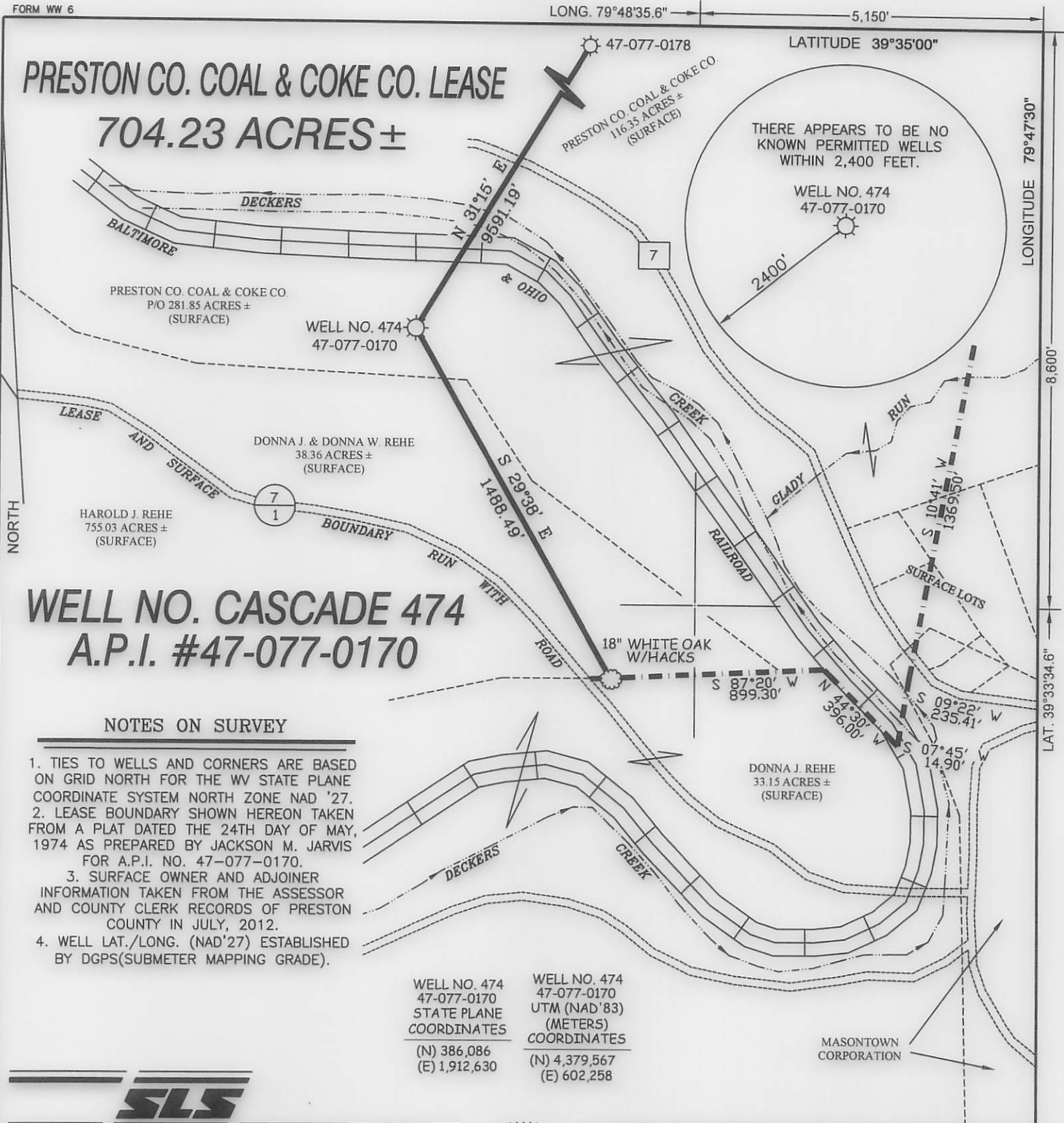
EXISTING CULVERT

PROPOSED CULVERT 12" MIN UNLESS OTHERWISE NOTED

Office of Oil and Gas
PROPOSED STREAM CROSSING
APPROXIMATE LIMITS OF DISTURBANCE

PRESTON CO. COAL & COKE CO. LEASE

704.23 ACRES±



NOTES ON SURVEY

1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM A PLAT DATED THE 24TH DAY OF MAY, 1974 AS PREPARED BY JACKSON M. JARVIS FOR A.P.I. NO. 47-077-0170.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF PRESTON COUNTY IN JULY, 2012.
4. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).

WELL NO. 474
47-077-0170
STATE PLANE
COORDINATES
(N) 386,086
(E) 1,912,630

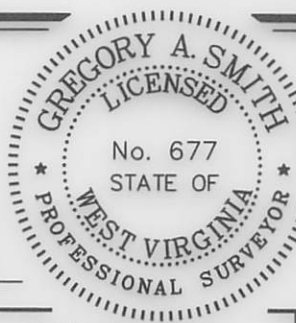
WELL NO. 474
47-077-0170
UTM (NAD'83)
(METERS)
COORDINATES
(N) 4,379,567
(E) 602,258

SLS

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

P.S.
677

Gregory A. Smith



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

DATE AUGUST 2, 20 13

OPERATORS WELL NO. CASCADE 474

API WELL NO. 47-077-00170R
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 8041P170R (206-15)
PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 500'

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS



WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL ☒ IF "GAS" PRODUCTION ☒ STORAGE DEEP SHALLOW ☒

LOCATION: ELEVATION 1,717' WATERSHED DECKERS CREEK

DISTRICT VALLEY COUNTY PRESTON QUADRANGLE MASONTOWN 7.5'

SURFACE OWNER PRESTON CO. COAL & COKE CO. ACREAGE 281.85±

ROYALTY OWNER PRESTON CO. COAL & COKE CO. OR ASSIGNS LEASE ACREAGE 704.23±

PROPOSED WORK: LEASE NO.

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION ☒ PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATION MARCELLUS

ESTIMATED DEPTH 7,460' - 7,535'

WELL OPERATOR ENERGY CORPORATION OF AMERICA

DESIGNATED AGENT RODNEY A. WINTERS

ADDRESS 501 56TH STREET S.E.
CHARLESTON, WV 25304

ADDRESS 501 56TH STREET S.E.
CHARLESTON, WV 25304

COUNTY NAME

PERMIT